

# PATENT ABSTRACTS OF JAPAN

(11)Publication number : 11-097428

(43)Date of publication of application : 09.04.1999

(51)Int.Cl.

H01L 21/3065  
C23F 4/00  
H01L 21/28  
H01L 21/3213

(21)Application number : 09-273800

(71)Applicant : NEC CORP

(22)Date of filing : 19.09.1997

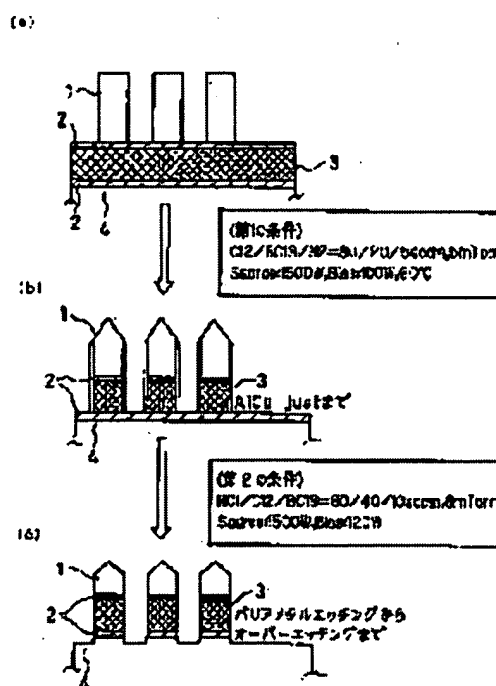
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## (54) METHOD FOR DRY ETCHING METAL WIRING

### (57)Abstract:

**PROBLEM TO BE SOLVED:** To suppress extension of a base barrier metal to minimum and completely eliminate residual after processing, by etching using a plasma to which nitrogen gas is added, and then etching using a mixed gas that contains hydrogen chloride gas.

**SOLUTION:** At the time of forming an aluminum wiring having a stacked structure of TiN/AlCu/TiN, a photoresist 1 is used as a mask, and first conditions wherein nitrogen gas N<sub>2</sub> is added as an additional gas are applied until AlCu<sub>3</sub> is completely etched. The first conditions are; Cl<sub>2</sub>/BCl<sub>3</sub>/N<sub>2</sub>= 80/20/5 sccm, 5 mTorr, source: 1500 W, bias: 100 W, 60°C. Then, second conditions wherein hydrogen chloride gas is mainly used are applied and a lower layer TiN<sub>2</sub> is etched. The second conditions are; HCl/Cl<sub>2</sub>/Bcl<sub>3</sub>=80/40/10 sccm, 8 mTorr, source: 1500 W, bias: 120 W.



## LEGAL STATUS

[Date of request for examination] 19.09.1997

[Date of sending the examiner's decision of rejection] 25.12.2001

[Kind of final disposal of application other than  
the examiner's decision of rejection or  
application converted registration]

[Date of final disposal for application]

[Patent number] 3324466

[Date of registration] 05.07.2002

[Number of appeal against examiner's  
decision of rejection] 2002-01309

[Date of requesting appeal against examiner's  
decision of rejection] 24.01.2002

[Date of extinction of right]

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